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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA – SAN FRANCISCO DIVISION

TVI INTERACTIVE DATA CORPORATION,

Plaintiff,

v.

SONY CORPORATION *et al.*

Defendants.

Civil Action No. 3:10-cv-00475-JCS

DECLARATION OF ROBERT L. KLEIN IN SUPPORT OF SONY'S *DAUBERT* MOTIONS

I, ROBERT L. KLEIN, hereby declare and state as follows:

1. I am the co-founder and President of Applied Marketing Science, Inc. I have been retained as an expert witness on surveys in the above-noted case on behalf of defendants Sony. My curriculum vitae is attached as Exhibit 1.

2. As part of my work in this case, I have analyzed the data collected by Dr. V. Srinivasan in support of surveys which have been conducted on behalf of plaintiff TVI.

3. My opinions regarding the considerable defects and unreliability of the surveys conducted by Dr. Srinivasan were set forth in my rebuttal expert report attached as Exhibit 2 without Appendices.

4. A critical and fatal flaw of the Srinivasan surveys was his use of a "price discount" as one of the attributes in his conjoint surveys. Rather than showing the actual price for each product alternative in a choice set, the Srinivasan surveys used a “price discount” attribute without any reference to the final price of the product. This method does not have acceptance in the relevant scientific community[1] for surveys, and I am unaware of any cases in which a conjoint survey using a price discount, rather than a price attribute, was accepted by the court in a litigation matter. A re-analysis of data from the Srinivasan surveys suggests that the method used in the Srinivasan surveys appears to have caused many respondents to make choices that indicated that they valued a larger discount less than a smaller discount or no discount at all. I found from analyzing the data from Phase 2 of the Srinivasan surveys that the price discount variable was ill-behaved, indicating that respondents were either not understanding that it was a discount or

[1] Sawtooth Software, the developer and publisher of the software used in the Srinivasan surveys, has published hundreds of technical papers describing the use of conjoint analysis in a wide variety of products and services. In that body of literature, the only references to a “price discount” attribute were in cases where the objective was to measure the effect of a temporary price promotion – a fundamentally different situation than valuing autoplay for a DVD, BD or PS3 player.

were not holding everything else constant. Improper interpretation of the price discount variable renders the conclusions regarding marketplace willingness to pay for product features unreliable.

5. The Srinivasan reports based their assessment of the value of Next Disc Playback (auto play) on an analysis of the results of the Choice-Based Conjoint exercise of Phase 2 that constrained the utility of the price variable to make sense. In other words, regardless of the choices made by respondents, the utility calculated for a larger discount was forced to be larger than the utility calculated for a smaller discount, which was in turn forced to be larger than the utility calculated for no discount. It would have been nice if survey respondents answered in such a way that indicted that they did, in fact, prefer a $10 discount to a $5 discount and a $5 discount to no discount. However, that is not the case for much of the data collected and analyzed for the Srinivasan surveys.

6. To determine the extent to which the respondents in Srinivasan's surveys were demonstrating negative utility to increasing price discounts, I used the same software used by Dr. Srinivasan to reach conclusions about the value of auto play, and analyzed the data without constraining the price discount variable. I have set forth each of the responses listing the utilities for the discounts in the attached Exhibit 3, which was also submitted as Appendix D to my rebuttal report.

7. What I found was that, in each of the Srinivasan surveys, approximately half the respondents had estimated utilities that violated the rational economic assumption that a larger discount is preferable to a smaller discount.

Blu-ray

24% prefer $0 to $10 discount
25% prefer $0 to $5 discount
36% prefer $5 to $10 discount
50% with some price preference inconsistency

DVD

20% prefer $0 to $5 discount
25% prefer $0 to $3 discount
38% prefer $3 to $5 discount
52% with some price preference inconsistency

PS3

23% prefer $0 to $20
25% prefer $0 to $10
31% prefer $10 to $20
46% with some price preference inconsistency

The results shown in the above table were obtained by using the .ATT and .CHO files provided with the Srinivasan Reports and performing the same calculations (using the Reboot alternative only) as were performed for the Srinivasan Reports, but without constraining the price variable to "make sense."

8. In addition to the majority of respondents noted above who violate the rational economic assumption that a larger discount should be preferred to a smaller discount, there are a significant number of additional respondents whose preference for the largest discount is not statistically significantly different from their preference for no discount at all. For DVD players, of the 48% who do not have a direct price preference inconsistency, 46% are statistically indifferent between a $5 discount and no discount at all. For PS3, of the 54%, who do not have a direct price preference inconsistency, 50% are statistically indifferent between a $20 discount and no discount at all. For Blu-ray players, of the 50% of respondents who do not have a direct price preference inconsistency, 51% are statistically indifferent between a $10 discount and no discount. These responses are also listed in Exhibit 3.

9. In sum, the addition of both respondents who valued a smaller discount over a larger discount and those who were statistically indifferent between a larger and smaller discount yields these results:

Blu-Ray	75% prefer a smaller discount to a larger discount or are statistically indifferent between the largest and the smallest discount.
DVD	74% prefer a smaller discount to a larger discount or are statistically indifferent between the largest and the smallest discount.
PS3	73% prefer a smaller discount to a larger discount or are statistically indifferent between the largest and the smallest discount

10. I was also asked to review the data from Phase 2 to determine the extent to which respondents for the auto play versus reboot portion who were presented with a choice set having two of the set of four alternatives identical in all features except the price discount illogically selected the alternative with the smaller discount. Although there were over one million possible choice tasks[2] that could be presented to any respondent, some respondents were, in fact, presented with alternatives where the only difference was the size of the price discount. A significant number of these respondents illogically choose the alternative with the smaller discount.

(a) For the DVD Phase 2 survey, there were 200 choice tasks that presented two identical products (out of the four shown) that varied only according to price discount. In 88 of these choice tasks respondents chose one of these two nearly identical products and in 26 cases (30%), these respondents chose the DVD player with the smaller discount. These responses are set forth in Exhibit 4. We have highlighted the choice made by the respondent in each instance. As an example, Respondent 27 in Task 12 chose between two DVD players, both without multiple input/outputs and with instant skip/replay, two year warranties, and next disc playback in 20 seconds, and this respondent chose the DVD player at a $3 price discount over the one with a $5 discount. Such price discount negative responses were made by 20 respondents (26% of the 76

[2] For the DVD survey, there were 72 possible configurations (three 2-level attributes and two 3-level attributes – 2 times 2 times 2 times 3 times 3 equals 72.) The number of possible combinations of these 72 configurations taken 4 at a time is given by the formula, n!/((n-r)!(r!)) = 1,028,790.

respondents[3] who viewed choice tasks with products that were identical but for price and who chose one of these products).

(b) For the BD Phase 2 survey, there were 219 choice tasks that presented two identical products (out of the four shown) that varied only according to price discount. In 102 of these choice tasks respondents chose one of these two nearly identical products and in 28 cases (27%), these respondents chose the BD player with the smaller discount. These responses are set forth in Exhibit 5. We have highlighted the choice made by the respondent in each instance. For example, Respondent 50 in Task 6 when choosing between two BD players both having played media from computer, adjustable picture settings, camera and memory slot and a next disc playback on 40 seconds, chose the player at $0 discount over the one at $5 discount. Such price discount negative responses were made by 25 respondents (28% of the 90 respondents who viewed choice tasks with products that were identical but for price and who chose one of these products).

(c) For the PS3 Phase 2 survey, there were 213 choice tasks that presented two identical products (out of the four shown) that varied only according to price discount. In 97 of these choice tasks respondents chose one of these two nearly identical products and in 28 cases (29%), these respondents chose the PS3 player with the smaller discount. The responses are set forth in attached Exhibit 6. The choices made are highlighted. For example, Respondent 5 in Task 12 when choosing between two PS3 players both having play media from computer, built-in Wi-Fi, multiple input/outputs and next disc playback of 20 seconds, chose the PS3 system with a $10 discount over the one having a $20 discount. Such price discount negative responses were

[3] In a single case, a respondent viewed two choice tasks in which the products were identical but for price and selected the product with the larger discount for one of the choice tasks and selected the product with the smaller discount on the second such choice task. This respondent is thus represented in the denominator twice.

made by 26 respondents (29% of the 90 respondents[4] who viewed choice tasks with products that were identical but for price and who chose from one of these products).

In my opinion, these results demonstrate that the price discount method used by Dr. Srinivasan for these surveys was unreliable.

11. As described above, the unconstrained analysis of the Srinivasan conjoint studies revealed that data for many respondents showed negative or statistically insignificant differences for the price discount attribute. In a conjoint study with many attributes and levels and few choice tasks per respondent, it is plausible that the price attribute could be ill-behaved for individual respondents and in such cases, constraining on price may improve estimation. As Dr. Srinivasan argues in his deposition, constraining conjoint results on price allows for better prediction of individual choices.[5] However, this is particularly true when there are few data points for each individual respondent, which was not the case in the Srinivasan studies. Indeed, the Srinivasan studies tested few attributes and levels and presented many choice tasks (15) per respondent, providing more complete (and presumably more reliable) data for individual respondents.

12. I believe that there are several possible interpretations as to why the Srinivasan survey method failed and is unreliable. In evaluating the choices presented, respondents may not have obeyed the instruction to assume that all other aspects of the devices were the same. Or, they may have mistaken the price discount for a price surcharge. Whichever the explanation, when half of the respondents are providing obviously faulty answers, the questionnaire and any conclusions that flow from it are unreliable.

[4] In two cases, a single respondent viewed two choice tasks in which the products were identical but for price and selected the product with the larger discount for one of the choice tasks and selected the product with the smaller discount on the second such choice task. These two respondents are thus represented in the denominator twice.

[5] Deposition of Dr. V. Seenu Srinivasan, p. 293.

13. To test whether the Srinivasan surveys were providing a potentially reliable and reasonable value for auto play, I used the data from Phase 2 to determine what would be the respondents' "willingness to pay" for the other features that were tested in Phase 2. Although the "Dashboard" provided as an exhibit to each of the Srnivasan Reports shows the "willingness to pay" calculation for just auto play, the data included allows the calculation of willingness to pay for each of the included features.

14. Using again the data from Phase 2 of the Srinivasan survey, and employing the same software used by Dr. Srinivasan to measure the "willingness to pay" calculations, I have measured the willingness to pay for the six other features tested in Phase 2. Those calculations have been set forth in the attached Exhibit 7 (which was also Appendix C to my report).

15. As one example, the table below shows the willingness to pay for each of the six other tested features for the BD player. These calculations are based on the price constrained results of the Srinivasan Blu-ray report.

Feature	**Willingness to Pay**
Ability to play video from a computer	$ 26.79
Adjustable picture settings	$ 18.24
Camera memory slot	$ 16.89
Video noise reduction	$ 20.59
Surround sound	$ 31.22
Instant skip/replay	$ 19.40
Total	**$133.11**

The absurdity of these results is obvious as these are only 6 of the 18 possible features chosen for inclusion in the study and a fully-featured Blu-ray player can cost as little as $150.

16. Were one to attempt to get a full picture as to what the "willingness to pay" would be from the Srinivasan surveys for even the core features of the DVD player, BD player and PS3, one should include the 12 other features from Phase 1 that were not tested in Phase 2. Including

those features would only emphasize the conclusion that the Srinivasan survey had greatly overvalued the auto play feature and is not reliable. If the 12 additional features were considered to add only an additional willingness to pay comparable to the 6 features in Phase 2, the supposed willingness to pay measured by the surveys for 18 features would amount to about twice the retail price of the products. This would indicate that the "willingness to pay" for auto play measured by the Srinivasan surveys bears no relationship to market realities of what consumers actually have and will pay for features in DVD, BD and PS3 products as represented by the retail prices actually paid in the market.

17. The significant bias in the calculation of willingness to pay is caused by the flaws described above related to the Srinivasan surveys' use of the price discount attribute. These flaws result in the utility for price being reduced, all other things being equal, relative to measured utility for the other features. This, in turn, causes the calculated "willingness to pay" for other features, including auto play, to be significantly larger than had the flaws in the price discount attribute not existed. In other words, any opinion based on the Srinivasan surveys significantly overstates the respondents' willingness to pay for auto play.

I declare under penalty of perjury that the foregoing statements are true and correct.

Executed on: January 3, 2013

Robert L. Klein